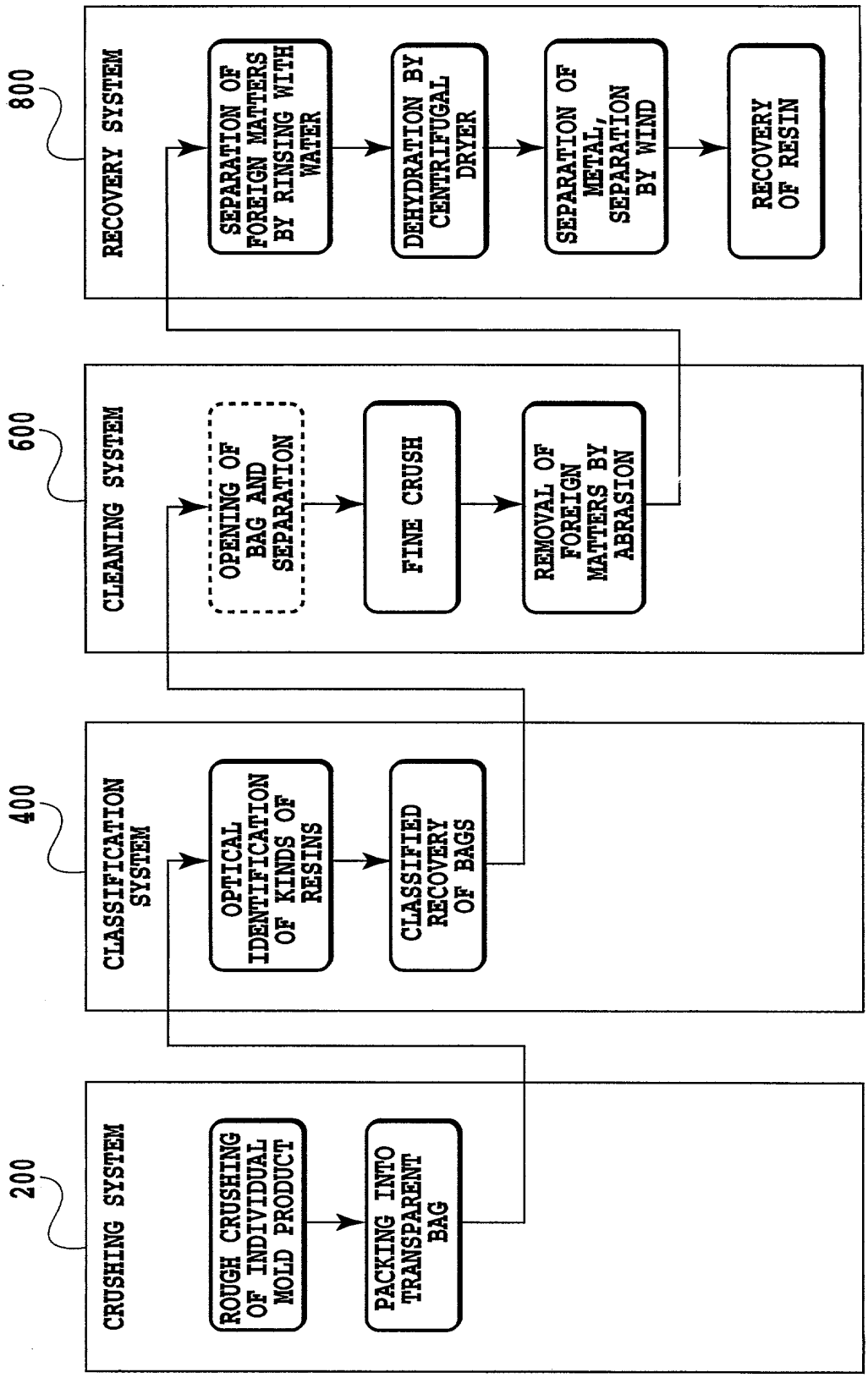

200
CRUSHING SYSTEM
ROUGH CRUSHING OF INDIVIDUAL MOLD PRODUCT
PACKING INTO TRANSPARENT BAG
400
CLASSIFICATION SYSTEM
OPTICAL IDENTIFICATION OF KINDS OF RESINS
CLASSIFIED RECOVERY OF BAGS
600
CLEANING SYSTEM
OPENING OF BAG AND SEPARATION
FINE CRUSH
REMOVAL OF FOREIGN MATTERS BY ABRASION
800
RECOVERY SYSTEM
SEPARATION OF FOREIGN MATTERS BY RINSING WITH WATER
DEHYDRATION BY CENTRIFUGAL DRYER
SEPARATION OF METAL, SEPARATION BY WIND
RECOVERY OF RESIN

FIG.1

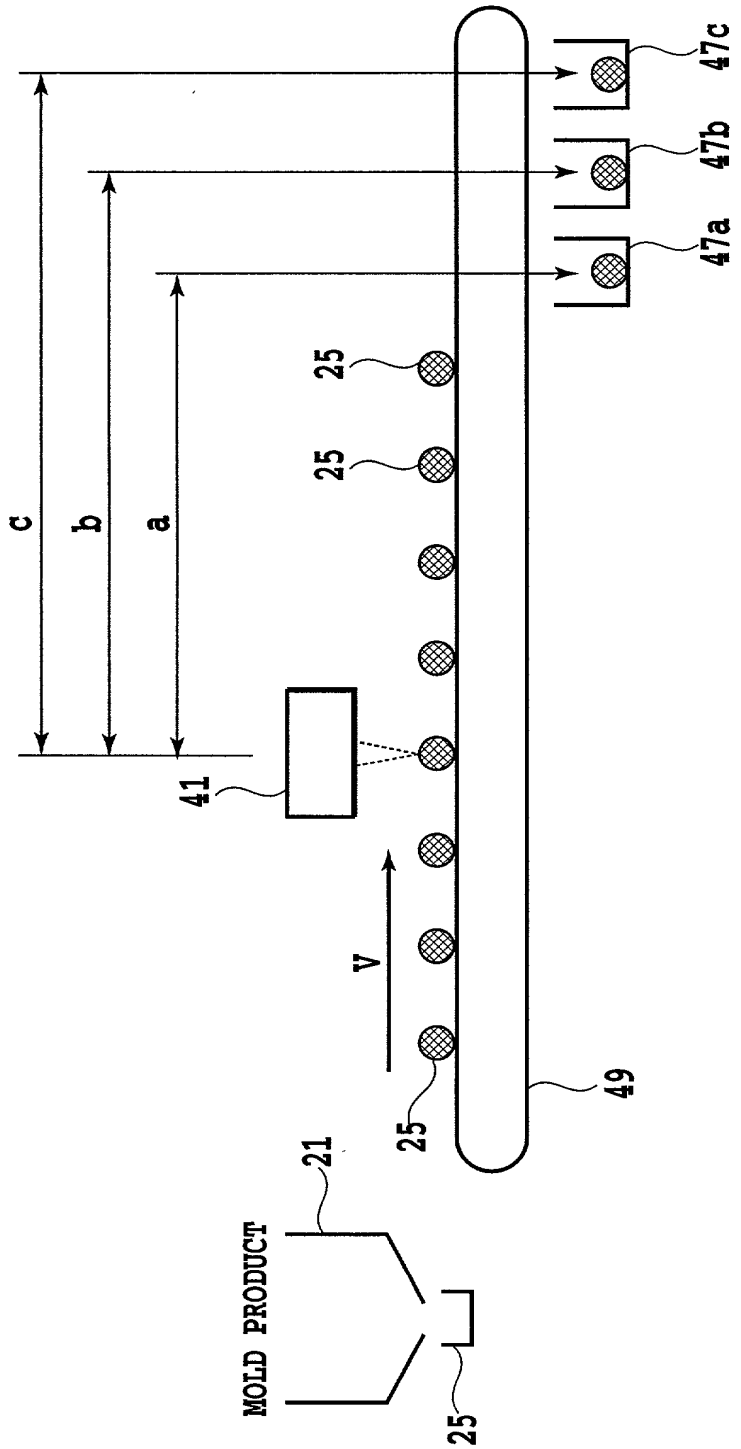


FIG.2

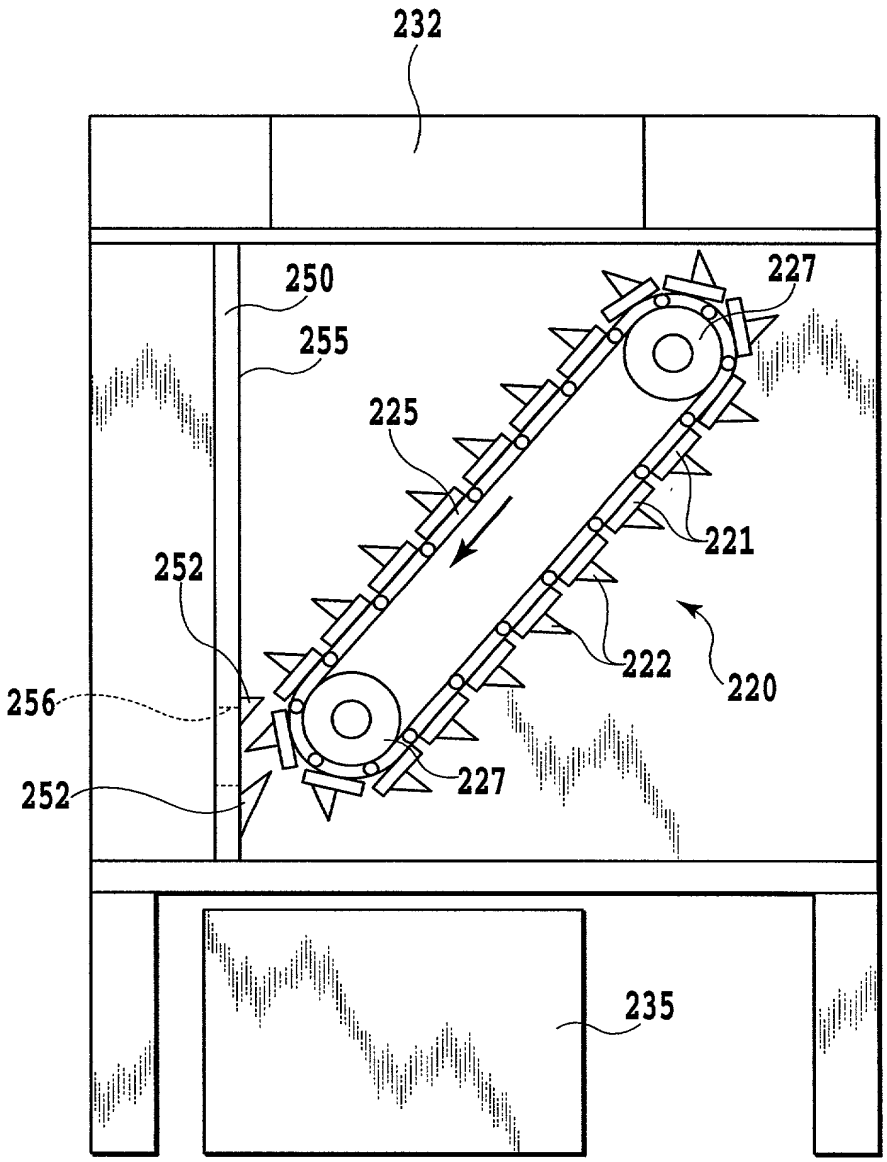


FIG.3

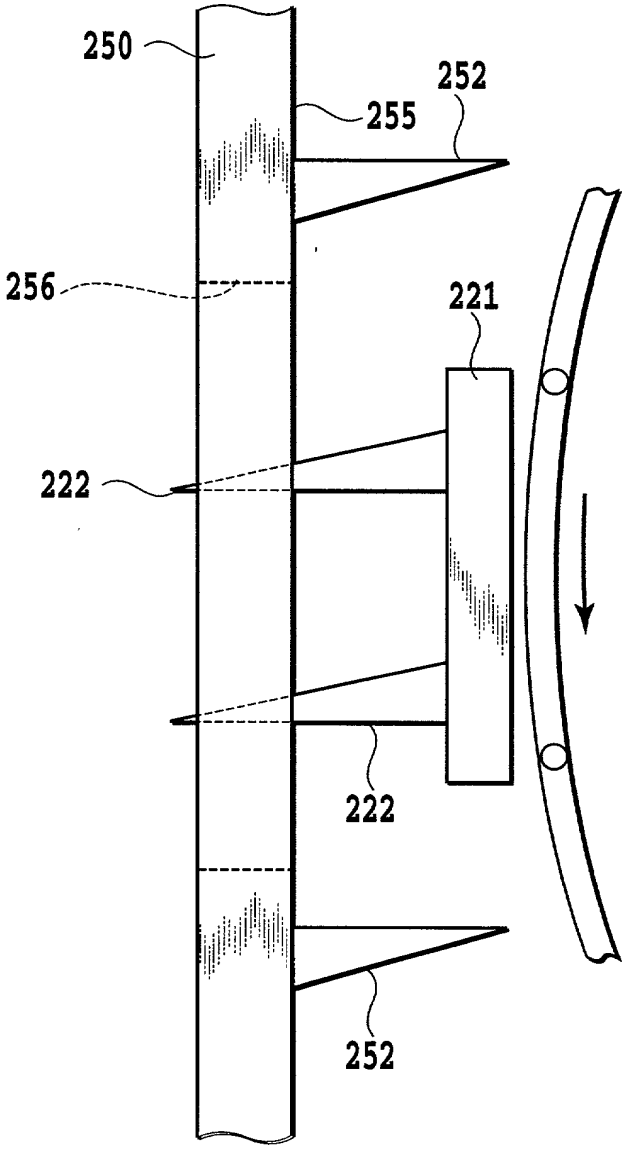


FIG.4

FIG.5A

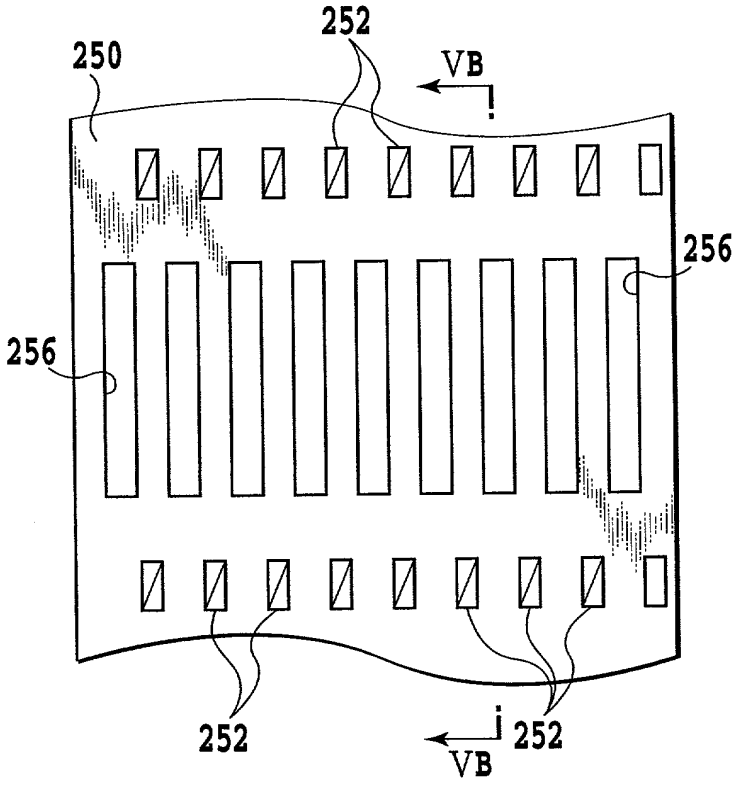


FIG.5B

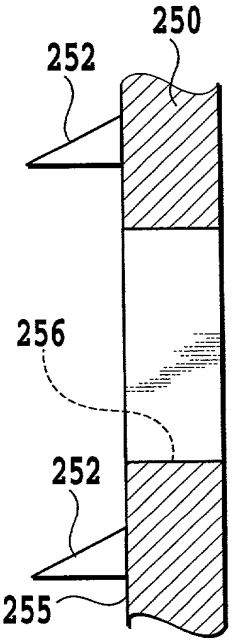


FIG.5C

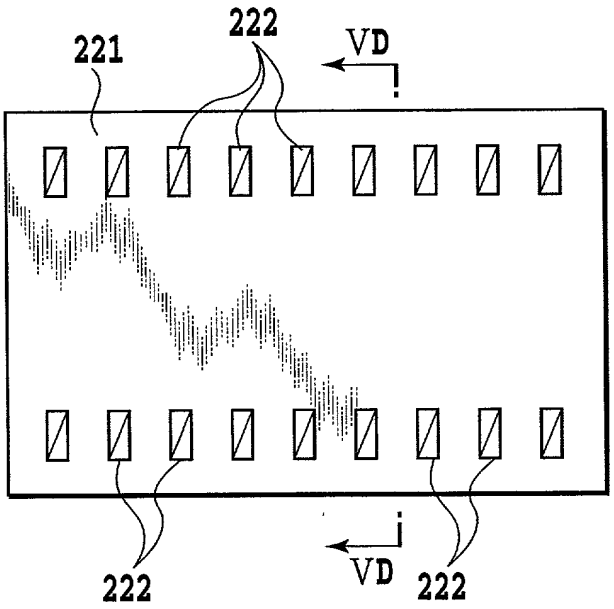
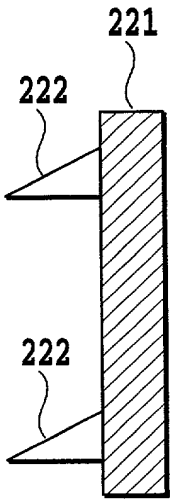


FIG.5D



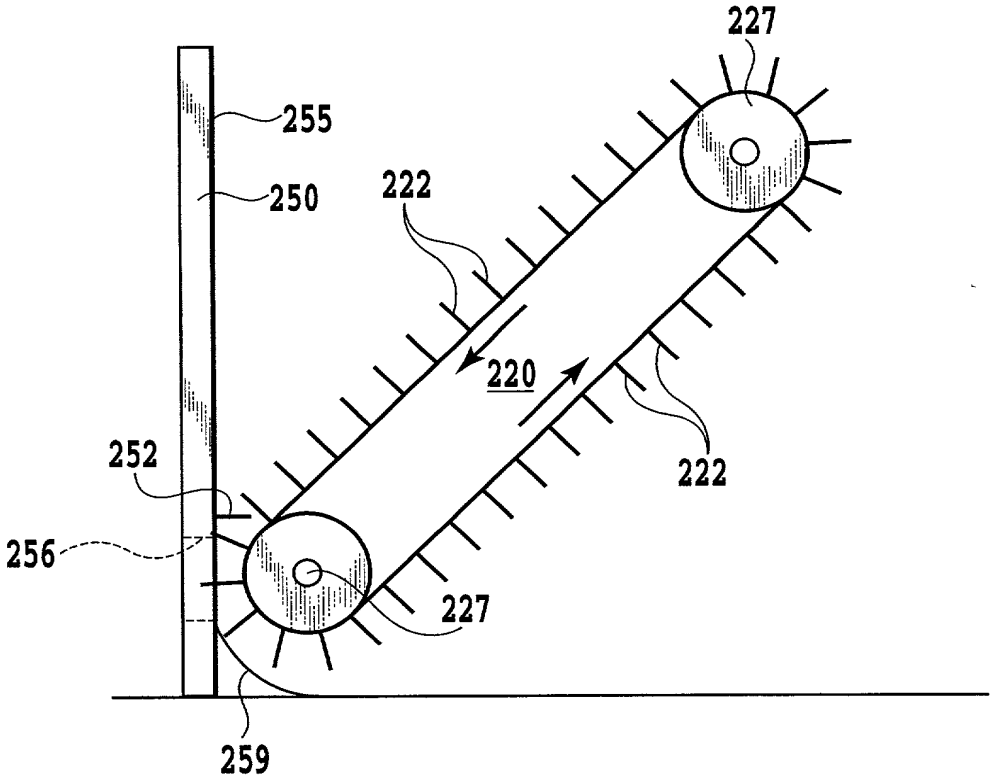


FIG.6A

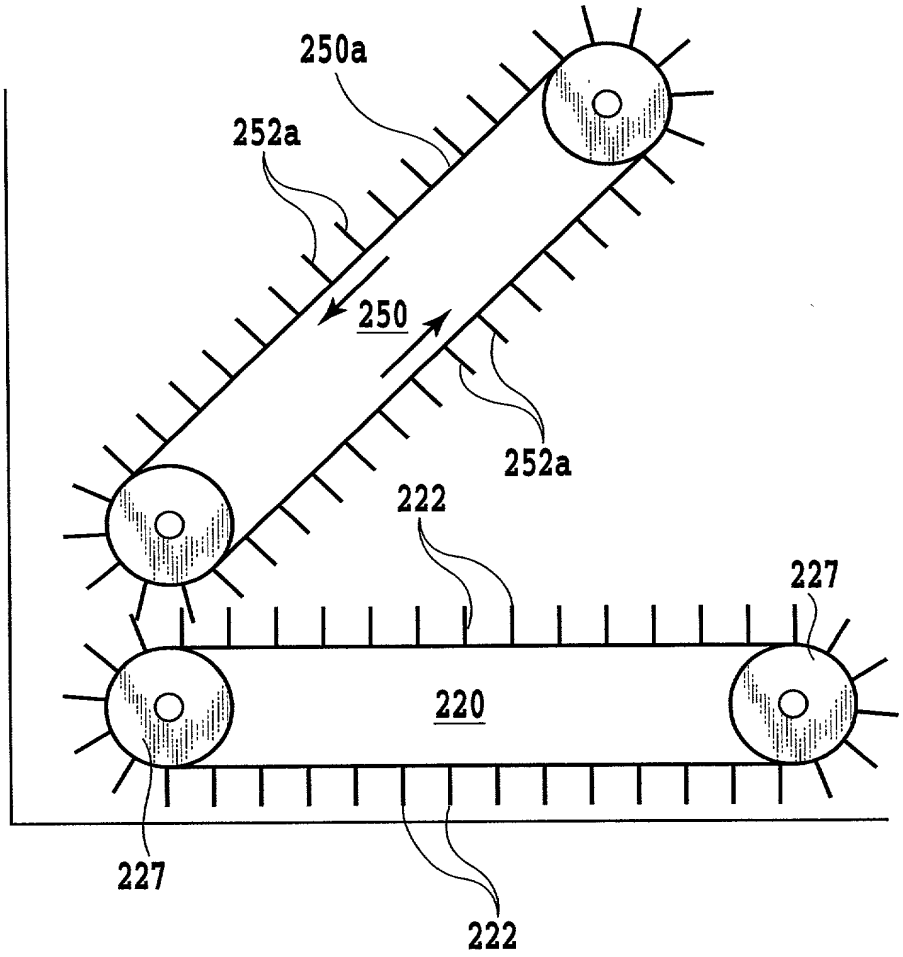


FIG.6B

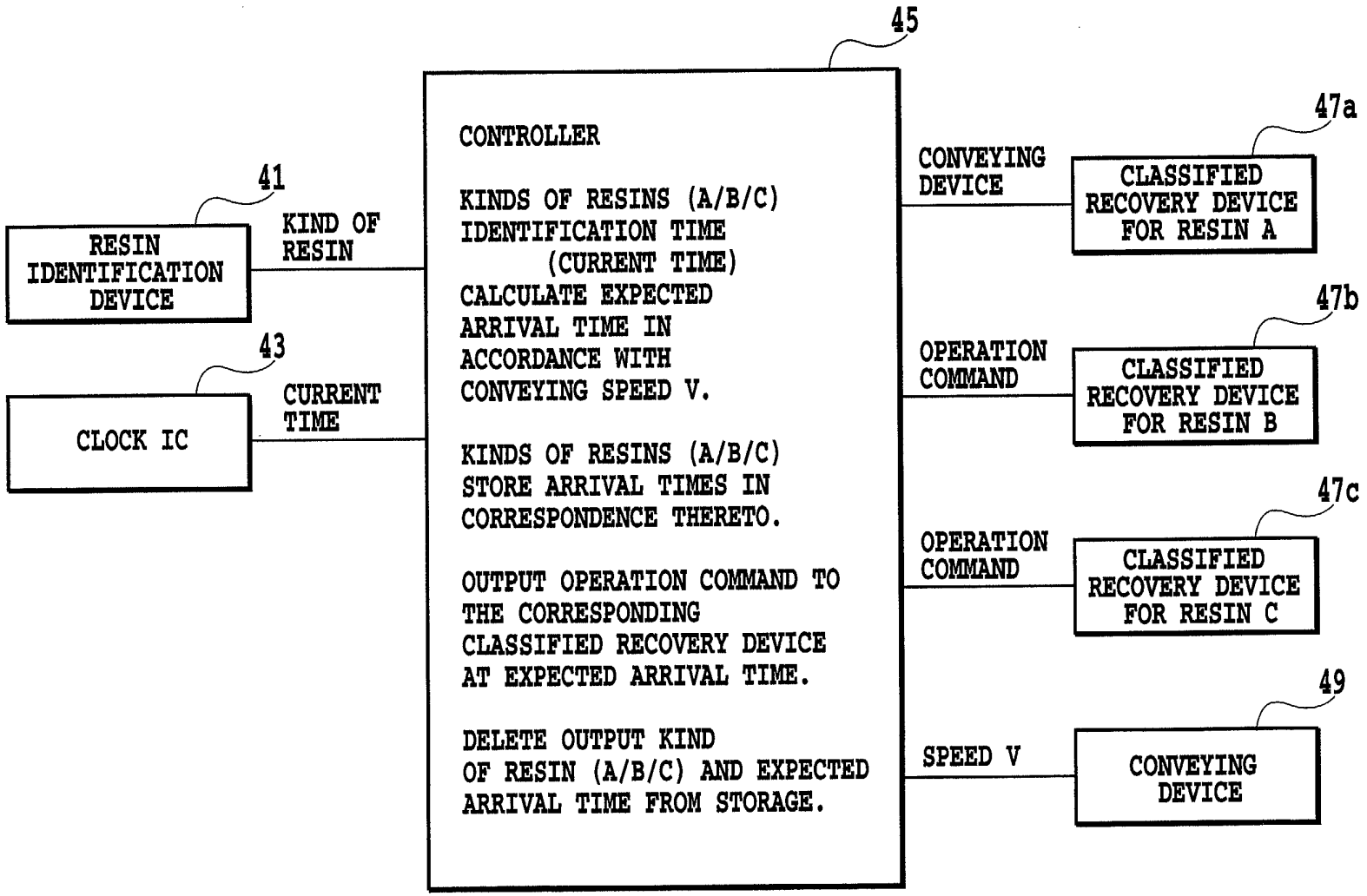

45
CONTROLLER
KINDS OF RESINS (A/B/C)
IDENTIFICATION TIME
(CURRENT TIME)
CALCULATE EXPECTED
ARRIVAL TIME IN
ACCORDANCE WITH
CONVEYING SPEED V.
KINDS OF RESINS (A/B/C)
STORE ARRIVAL TIMES IN
CORRESPONDENCE THERETO.
OUTPUT OPERATION COMMAND TO
THE CORRESPONDING
CLASSIFIED RECOVERY DEVICE
AT EXPECTED ARRIVAL TIME.
DELETE OUTPUT KIND
OF RESIN (A/B/C) AND EXPECTED
ARRIVAL TIME FROM STORAGE.
41
RESIN IDENTIFICATION DEVICE
KIND OF RESIN
43
CLOCK IC
CURRENT TIME
CONVEYING DEVICE
47a
CLASSIFIED RECOVERY DEVICE FOR RESIN A
OPERATION COMMAND
47b
CLASSIFIED RECOVERY DEVICE FOR RESIN B
OPERATION COMMAND
47c
CLASSIFIED RECOVERY DEVICE FOR RESIN C
SPEED V
49
CONVEYING DEVICE

FIG.7

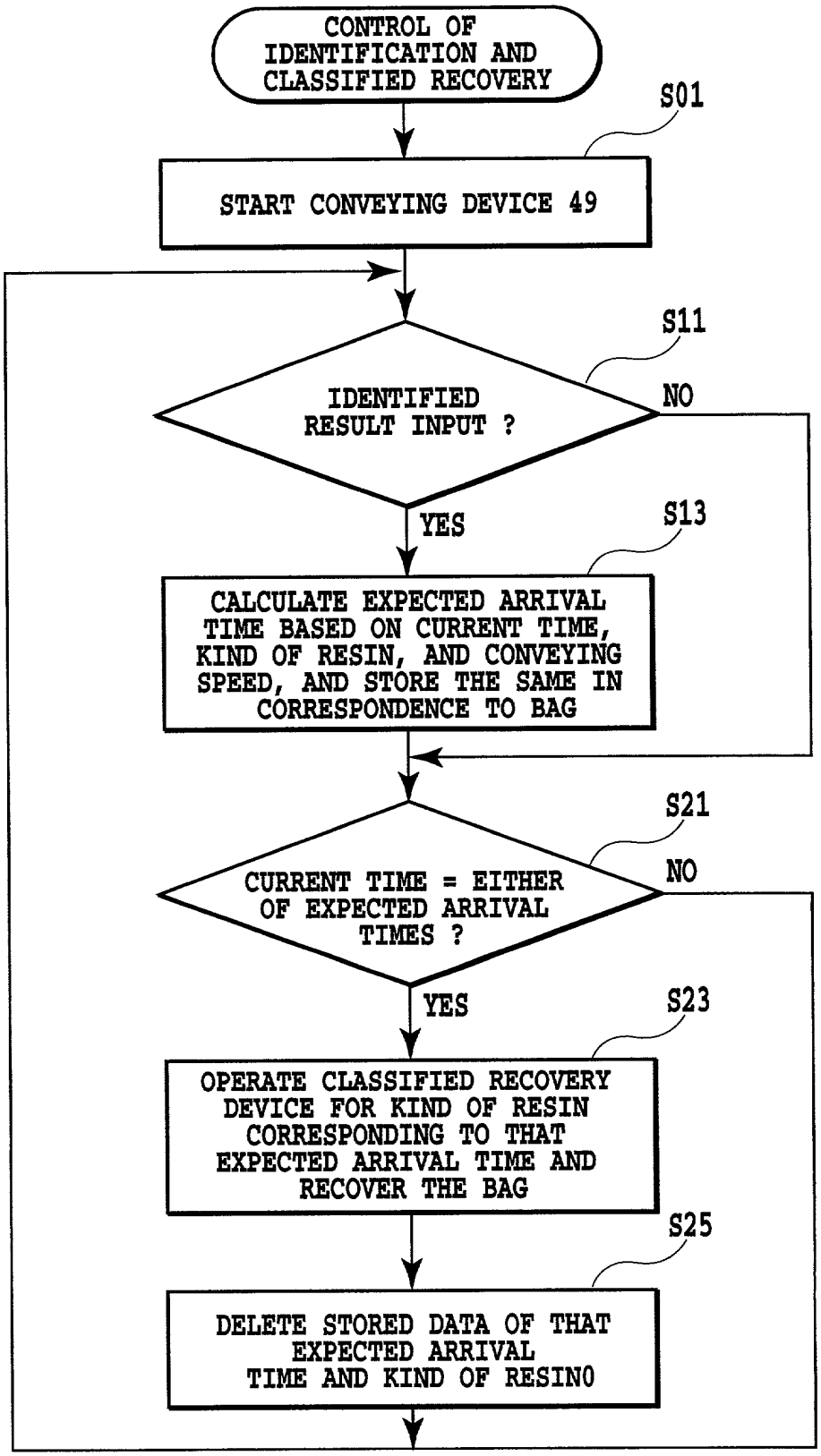

CONTROL OF IDENTIFICATION AND CLASSIFIED RECOVERY
S01
START CONVEYING DEVICE 49
S11
IDENTIFIED RESULT INPUT ?
NO
YES
S13
CALCULATE EXPECTED ARRIVAL TIME BASED ON CURRENT TIME, KIND OF RESIN, AND CONVEYING SPEED, AND STORE THE SAME IN CORRESPONDENCE TO BAG
S21
CURRENT TIME = EITHER OF EXPECTED ARRIVAL TIMES ?
NO
YES
S23
OPERATE CLASSIFIED RECOVERY DEVICE FOR KIND OF RESIN CORRESPONDING TO THAT EXPECTED ARRIVAL TIME AND RECOVER THE BAG
S25
DELETE STORED DATA OF THAT EXPECTED ARRIVAL TIME AND KIND OF RESIN0

FIG.8

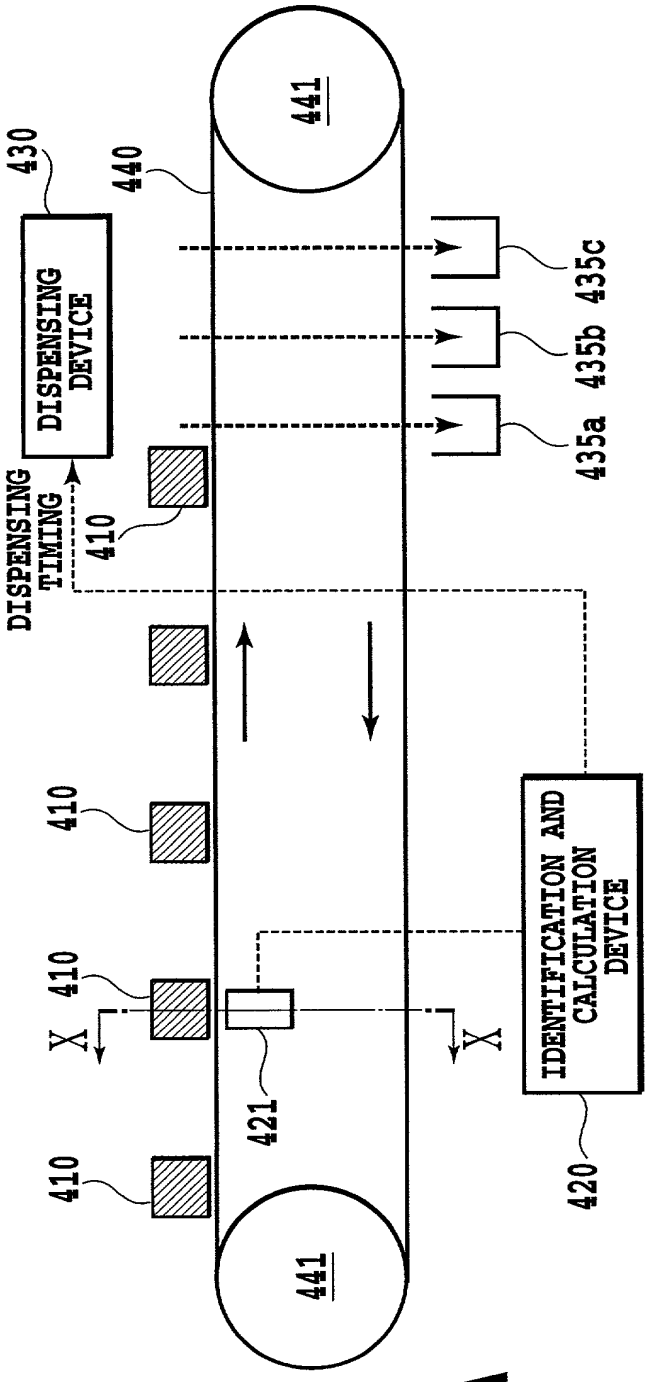

441
430
440
DISPENSING DEVICE
DISPENSING TIMING
410
435c
435b
435a
410
410
X
X
421
410
IDENTIFICATION AND CALCULATION DEVICE
420
441

FIG.9A

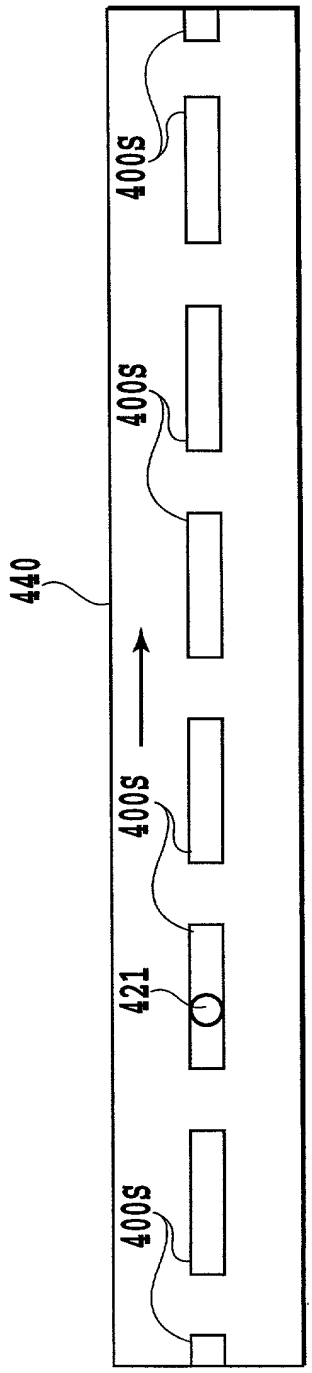

400s
400s
400s
400s
400s
440
421

FIG.9B

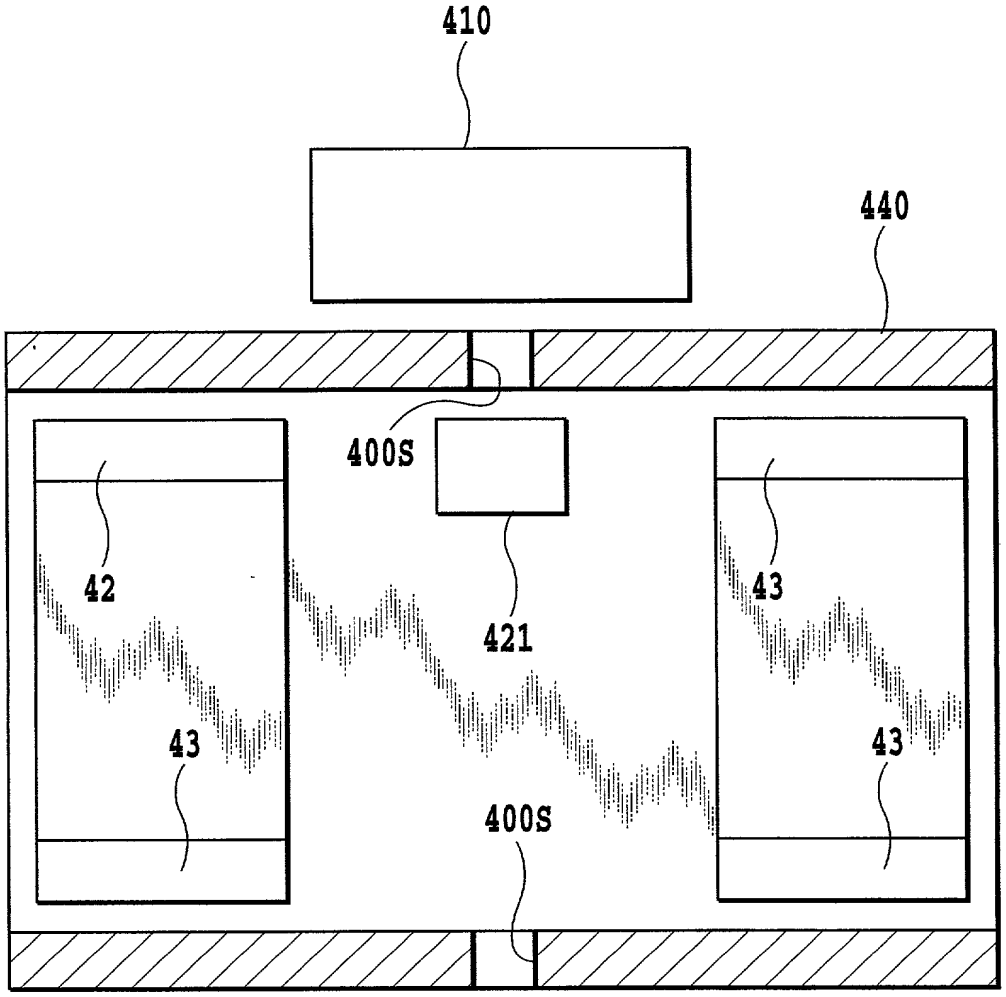


FIG.10

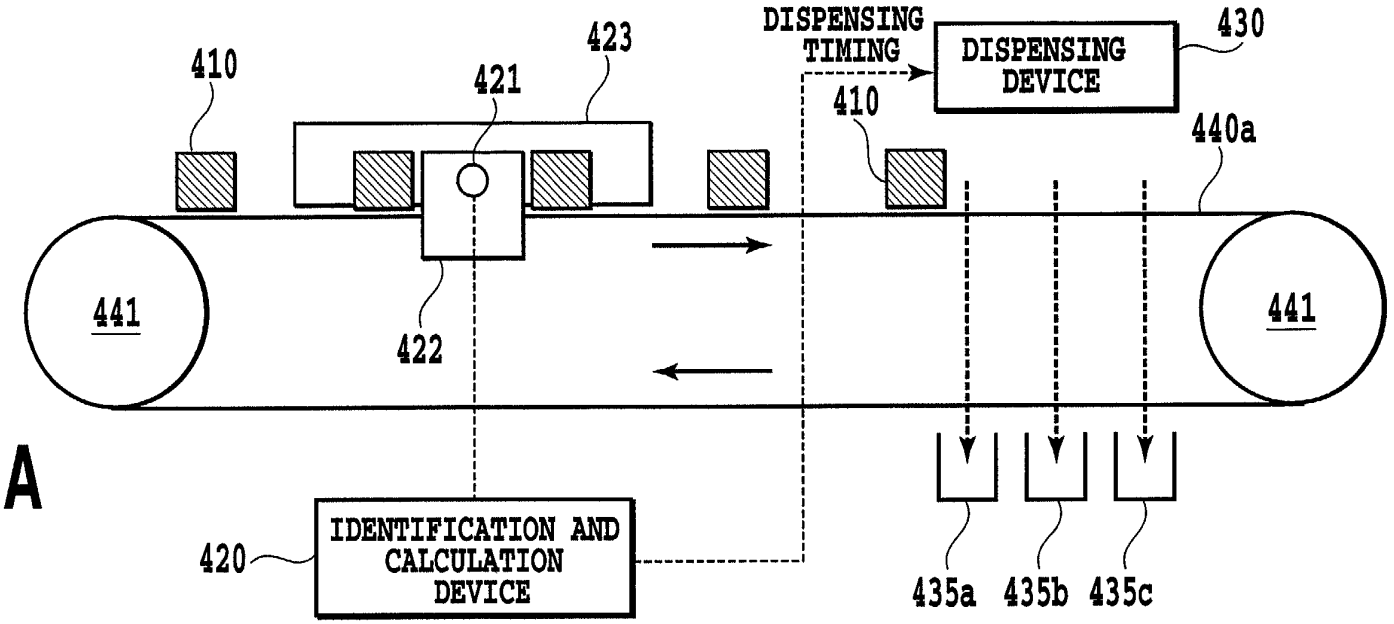


FIG.11A

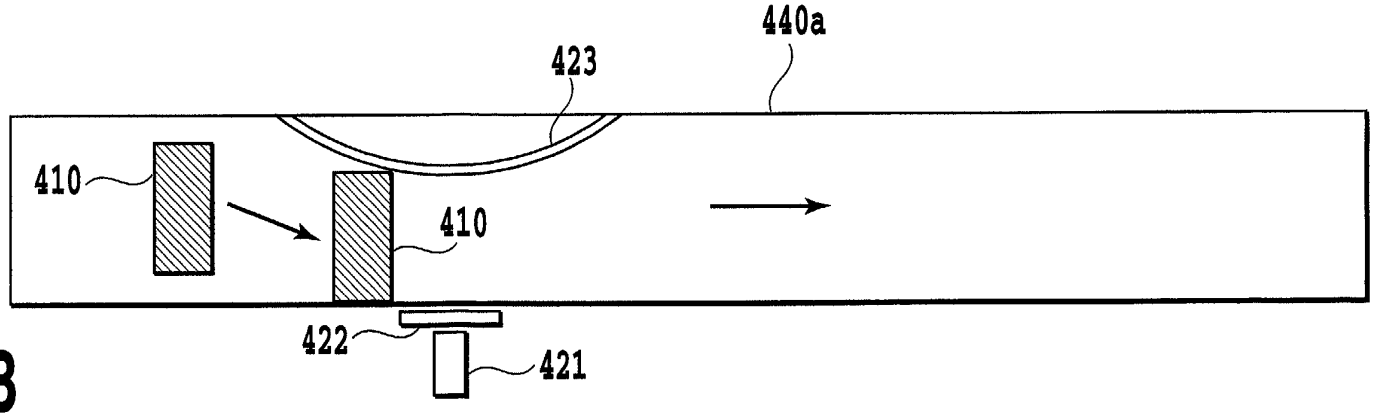


FIG.11B

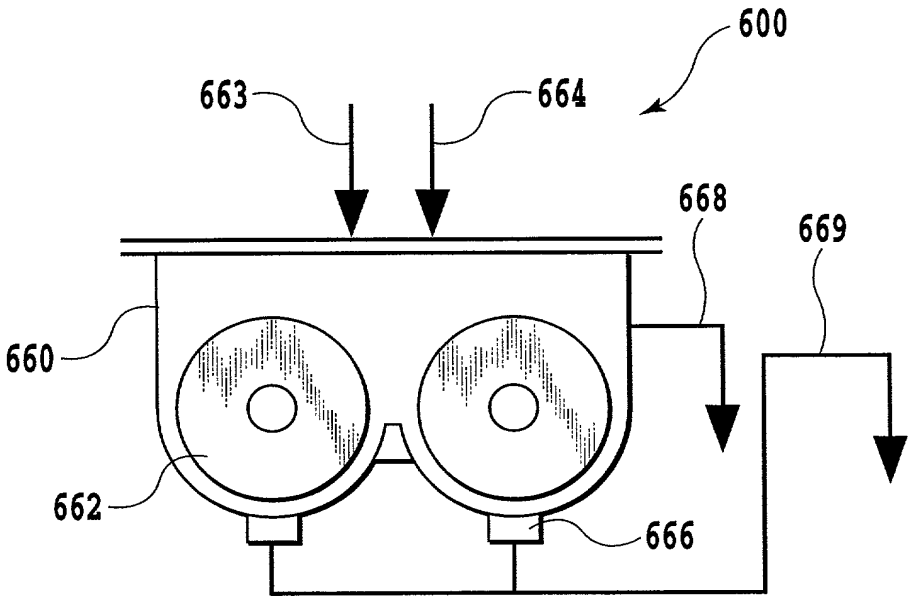


FIG.12

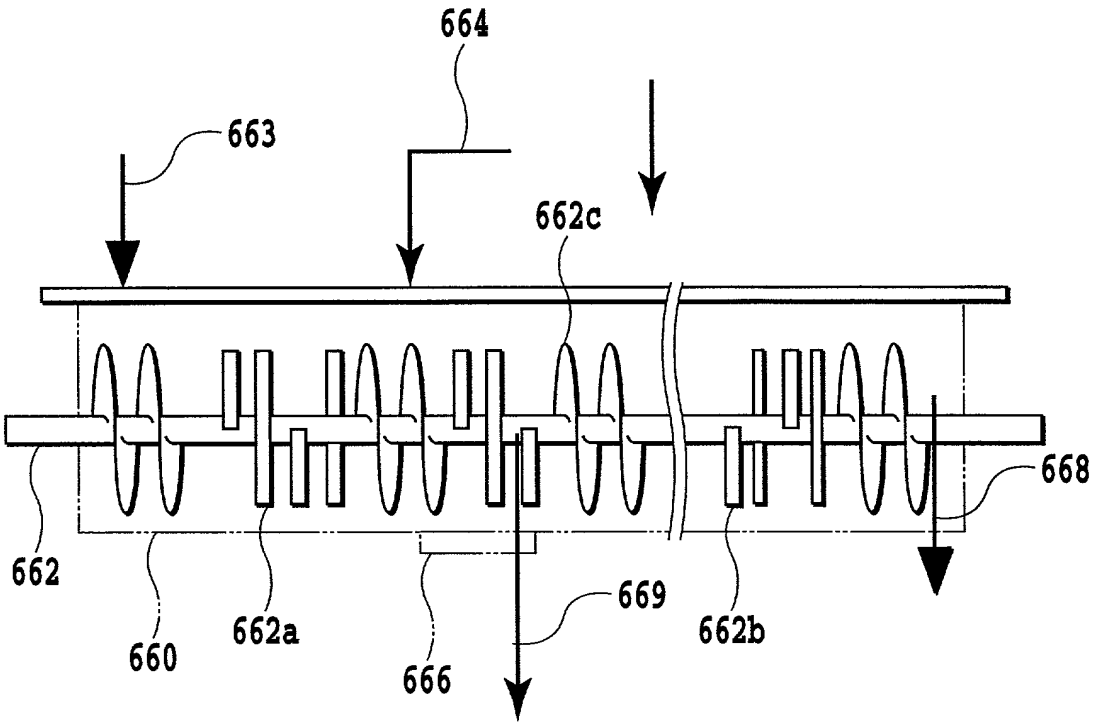


FIG.13

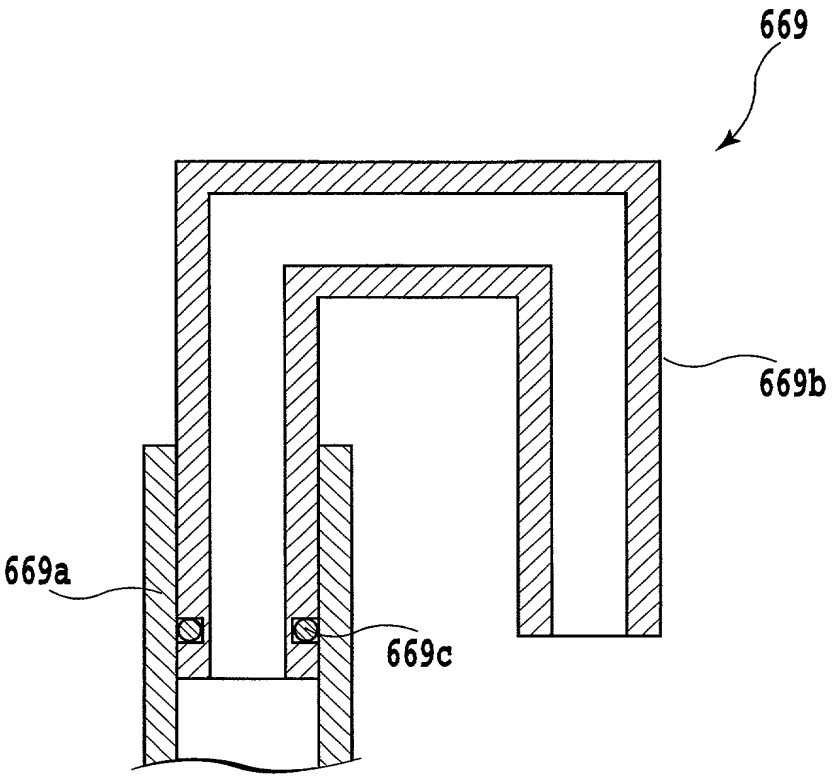


FIG.14

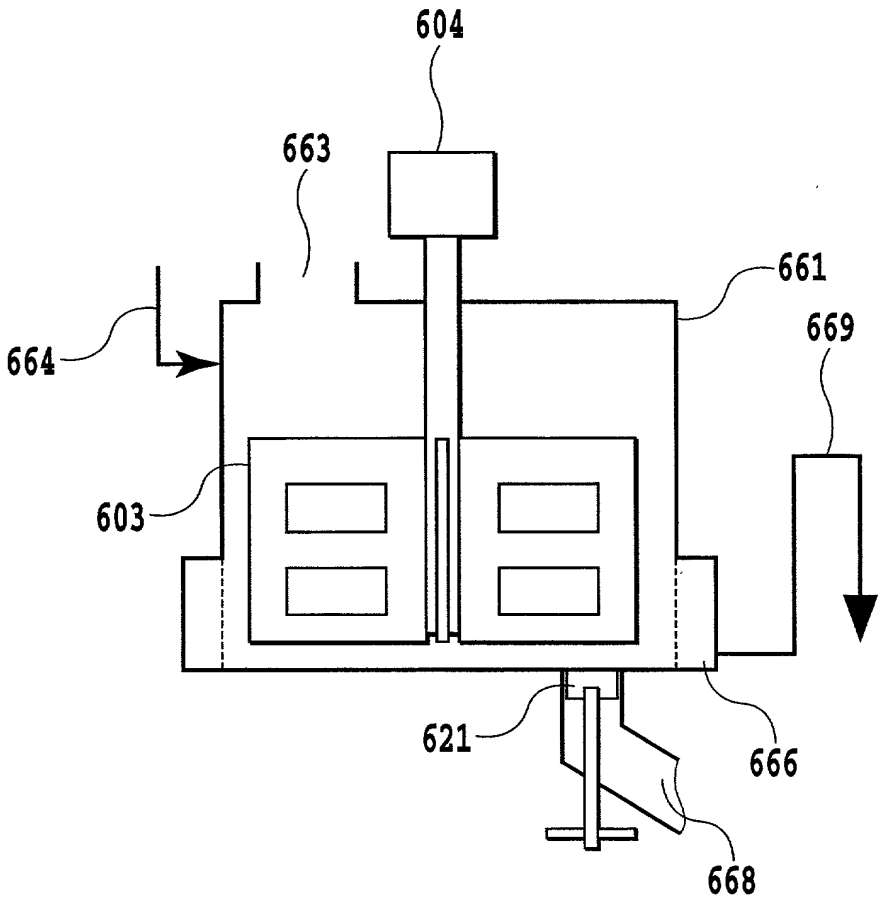


FIG.15

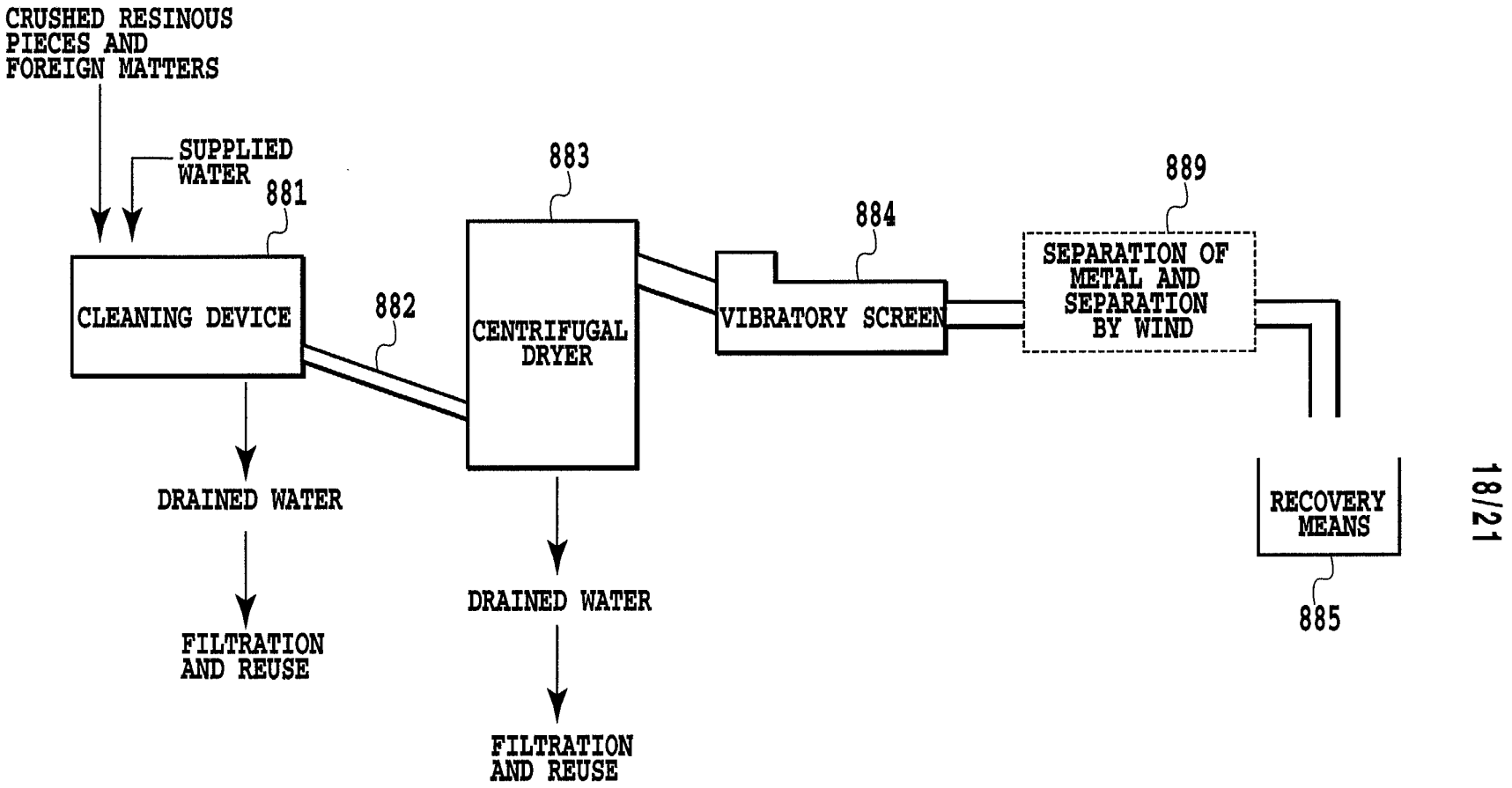

CRUSHED RESINOUS PIECES AND FOREIGN MATTERS
SUPPLIED WATER
881
CLEANING DEVICE
882
883
CENTRIFUGAL DRYER
884
VIBRATORY SCREEN
889
SEPARATION OF METAL AND SEPARATION BY WIND
RECOVERY MEANS
885
DRAINED WATER
FILTRATION AND REUSE
DRAINED WATER
FILTRATION AND REUSE

FIG.16

	EXAMPLE A	COMPARATIVE EXAMPLE A
TOTAL APPARENT VOLUME OF RESIN PARTS PRIOR TO BEING CRUSHED	130L	130L
TOTAL WEIGHT OF RESIN PARTS PRIOR TO BEING CRUSHED	11.3kg	11.3kg
BULKING DENSITY OF RESIN PARTS PRIOR TO BEING CRUSHED	0.09	0.09
BULKING DENSITY AFTER BEING CRUSHED	0.48	0.62
AVERAGE VALUE OF EQUIVALENT DIAMETERS OF CRUSHED RESINOUS PIECES	35mm	7mm
TOTAL WEIGHT OF CRUSHED RESINOUS PIECES	11.2kg	2.3kg
APPARENT VOLUME OF CRUSHED RESINOUS PIECES	23.3L	3.7L
ESTIMATION	ALL THE PARTS WERE CRUSHED TO REDUCE THEIR VOLUME	ONLY FIVE PARTS (2.3 KG) WERE CRUSHED TO FAIL THE REDUCTION OF VOLUME

FIG.17

ESTIMATION	EXAMPLE B	COMPARATIVE EXAMPLE B
TOTAL VOLUME OF RESIN PARTS PRIOR TO BEING CRUSHED (cm^3)	4500	4500
TOTAL VOLUME OF RESIN PARTS AFTER BEING CRUSHED (cm^3)	1115	1060
RATIO OF VOLUMES BETWEEN BEFORE AND AFTER BEING CRUSHED #1	4.0	4.2
NUMBER OF IDENTIFIED SAMPLES (PIECES)	3	ABOUT 2700#2
TIME REQUIRED FOR THE IDENTIFICATION (min)	0.15	ABOUT 135#3
IDENTIFIED RESULT	○	×

#1: (VOLUME OF RESIN PARTS PRIOR TO BEING CRUSHED) / (TOTAL VOLUME OF RESIN PARTS AFTER BEING CRUSHED)
#2: IT WAS ESTIMATED BY (WEIGHT OF RESIN PARTS PRIOR TO BEING CRUSHED) / (STANDARD WEIGHT OF ONE CRUSHED RESINOUS PIECE)
#3: IT WAS ESTIMATED BY (TOTAL WEIGHT OF CRUSHED RESINOUS PIECES) / (WEIGHT OF CRUSHED RESINOUS PIECES IDENTIFIABLE PER ONE MINUTE)

FIG.18

		EXAMPLE C	COMPARATIVE EXAMPLE C	COMPARATIVE EXAMPLE D	EXAMPLE D	COMPARATIVE EXAMPLE E	EXAMPLE E	COMPARATIVE EXAMPLE F
NUMBER OF FOREIGN MATTERS	FOREIGN MATTERS HAVING MAXIMUM LENGTH IN A RANGE FROM 0.05 TO 0.25 mm	3	—	NUMEROUS	4	IMPOSSIBLE TO MEASURE BECAUSE OF COATED FILM RESIDUE	4	NUMEROUS
	FOREIGN MATTERS HAVING MAXIMUM LENGTH IN A RANGE FROM 0.25 TO 0.5 mm	0		NUMEROUS	0		0	50 MORE
	FOREIGN MATTERS HAVING MAXIMUM LENGTH IN A RANGE FROM 0.5 mm OR MORE	0		50 MORE	0		0	30
NOTE		—	INOPERATIVE	LABEL PIECE LEFT	—	IMUCH COATED FILM RESIDUE	—	—
ESTIMATION		GOOD	NO GOOD	NO GOOD	GOOD	NO GOOD	GOOD	NO GOOD

FIG.19